DOCUMENT RESUME

ED 183 530 SP 015 667

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TITLE Student Teacher Influence on Learner Cognitive Attainment.
PUB DATE Feb 80
NOTE 12p.: Paper presented at the Annual Meeting of the Southwest Educational Research Association (San Antonio, TX, February 8, 1980).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement: College Supervisors: Cooperating Teachers: Preservice Education: *Research Design: *Research Methodology: *Student Teachers: *Teacher Education: Teacher Evaluation: *Teacher Influence

ABSTRACT

The twofold purpose of this study was to examine the impact of student teachers on pupil achievement and to investigate whether or not cooperating teachers and college supervisors were able to discriminate between those variables that correlated with pupil attainment. Fourteen classrooms of learners who had two different student teachers during the same academic year were the subjects. Each student teacher was required to prepare two units of instruction containing specific objectives and a post-test. The percentage of objectives achieved on the post-test of the second unit was used as the criterion variable. Findings indicated that student teachers accounted for 6 per cent of variance of pupil achievement. Results also indicated that the cooperating teacher and college supervisor improved in ability to discriminate between student teachers who elicited higher levels of achievement and those who did not. (JD)

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ED183530

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Paper presented at the annual meeting of the Southwest Educational Research Association, 1980.

SP 015667

Student Teacher Influence on
Learner Cognitive Attainment

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Need for Study

Many accept student teaching as the most important component of the teacher preparation program. Usually the capstone experience of preparation programs, successful completion of the student teaching program is an essential criterion for certification. The reality offered by student teaching is of great value, and it is hard to imagine a sound teacher preparation program that does not include this component. However, there are issues surrounding the student teaching experience that need to be addressed. One of the most important relates to the impact of student teachers on learners.

Generally institutions of higher education have cooperated in the design and management of student teaching. School districts have accepted the student teaching program as a necessary component and have allowed student teachers in their buildings as a matter of professional responsibility. Recent trends are placing a strain on that relationship resulting in a reevaluation of student teaching.

In understanding the basis for this concern it needs to be remembered that school districts and institutions of higher education have different sets of objectives that relate to the student teaching experience. The institution of higher education is basically concerned with the preparation and certification of individuals for a career in teaching. Therefore they are primarily interested in the needs of the student teacher. However, the school district has a primary responsibility to the students in the school district. Although

these differing perspectives have been recognized they have only occasionally been the source of serious concern. However, the contemporary mood of concern about the quality of education and the passage of accountability measures and competency testing has increased anxiety regarding learner achievement. As school districts see themselves threatened by these measures they may well begin to seriously question the impact of student teachers.

As a result of these forces it seems imperative that data be gathered regarding the student teaching program and especially concerning the achievement of learners when taught by student teachers. A review of the literature reveals an almost complete lack of studies concerning the impact of student teachers on learners. This void can possibly be attributed to the numerous political and practical problems associated with just such a study. It is very difficult to conduct studies regarding the impact of student teachers and establish all of the controls necessary to meet the assumptions of traditional research design.

Ideally it would be desirable to compare learner achievement when taught by a student teacher with the learner achievement of the group when taught by the regular classroom teacher. However, there are some rather large problems in attempting such a comparison.

A need for information about student teacher's influences on their learners led to a series of studies concerning the student teaching experience. One of the major purposes of these studies was to investigate the methodological problems inherent in conducting research on student teaching.

Statement of Problem

This study investigated student teacher impact on learner cognitive attainment by comparing the achievement of groups of learners taught by more than one student teacher. These learners had one student teacher during the fall term and a second during the spring term. If a wide variation of achievement were

noted, this might indicate that student teachers did have a considerable impact on the cognitive attainment of learners. However, if a stability of achievement was found, perhaps the supervision of student teachers by cooperating teachers and college supervisors serve as safe guards or have stabilizing effects. It is also possible that the old adage that students learn in spite of us is true. Nevertheless, a stability of achievement would be a first step in overcoming the anxiety of administrators, teachers and parents regarding the impact of student teaching.

A second problem investigated the correlation between cooperating teacher and college supervisor ratings of the student teacher and the cognitive attainment of learners. This was an attempt to determine whether or not the cooperating teachers and college supervisors were able to discriminate between those variables that correlated with learner cognitive attainment.

Design of the Study

The sample that was used were fourteen classrooms of learners who had two different student teachers during the same academic year. This resulted in a total of twenty-eight student teachers all of whom had the same university supervisor. Due to the fact that the researchers needed to use intact classrooms of learners representing a variety of content areas, socio-economic levels and environmental surroundings, it was decided that a criterion-referenced evaluation model similar to the contract plan developed by McNeil and Popham (1973, pp. 233-234) might be an appropriate model for conducting such a study. This approach is based on the notion that the appropriateness of the objectives for any given group of learners and the evidence to be used in determining whether or not the criterion had been met are to be agreed upon ahead of time. This model would allow the researchers to take into account the appropriateness of objectives and criterion measures for different groups of learners and the uniqueness of each setting. It was not possible in this study to control for history or

maturation.

Each student teacher in the sample was required to prepare two units of instruction for a group of learners. These units contained specific objectives and a teacher constructed post-test covering the objectives to be taught. The objectives were reviewed for appropriateness for the learners by the cooperating teacher and the college supervisor. Each objective was classfied according to type and level according to the Taxonomy of Educational Objectives (Bloom, 1956). Each item on the post-test was compared to the objectives by a group of university professors and evaluated for its appropriateness in measuring the stated objective.

The percentage of objectives achieved on the post-test of the second unit was used as the criterion variable. This was considered the most appropriate criterion measure because it came near the end of the student teaching term after the student teacher had the practice of completing the first unit.

The percentage of objectives achieved by students during the first semester were then compared with the percentage of objectives achieved by the students during the second semester when they had a different student teacher. These data were then treated using a regression model so that the amount of variance in student achievement attributed to the teacher could be identified.

A regression model was also used to compare the ratings given to the student teachers by the cooperating teacher and university supervision with the percentage of objectives achieved by the learners.

Results

The analysis associated with research indicated that approximately 6% of the variance in learner cognitive attainment could be explained by the student teacher. These results are reported in table 1.

Table 1

Statistical Summary of Regression Equation

Multiple R	.25	Analysis of Variance	D.F	M.S	F
R^2	.06	Regression	13	85323.78	7.75
Std Error	29.08	Residual	1509	1276416.87	

Variable	B	Beta	Std Error B	F
Semst	-2.07	-.03	1.83	1.28
Sup 1	8.57	.08	4.04	4.48
Sup 2	18.87	.08	6.40	8.69
Sup 3	-1.72	-.02	3.62	.22
Sup 4	4.36	.03	4.11	1.12
Sup 6	2.51	.02	3.87	.42
Sup 7	-17.57	-.08	6.18	8.07
Sup 8	5.12	.03	4.74	1.16
Sup 9	21.61	.20	4.01	28.97
Sup 10	7.32	.04	4.85	2.27
Sup 11	14.02	.12	3.95	12.59
Sup 13	5.04	.06	3.44	2.14
Sup 14	8.17	.03	6.12	1.78

Sup = The classroom of learners broken out according to the supervising teacher. Incomplete data for classrooms 5, 12 did not allow for analysis.

The analysis associated with the second question, that of the relationship of supervisor ratings of teaching variables with the percentage of objectives achieved revealed an interesting trend. During the first student teaching term only three of the ratings on teaching variables were positively correlated with learner achievement. These three items were: the use of performance objectives, the use of a five stage systematic model of instruction and the use of reinforcement techniques.

However during the second student teaching term eight of the ratings of individual teaching variables had a positive correlation with learner achievement. Those eight ratings were in the areas of: using performance objectives, student teacher mastery of content, providing appropriate introductions and conclusions to lessons, using diagnostic techniques using reinforcement techniques, using appropriate methods of instruction, giving clear directions and evaluating the instructional program.

It was also noted that when a composite rating of all twenty-one variables rated was provided that composite rating accounted for practically none of the variance (.00393) of learner cognitive attainment. However, by reporting the ratings for each of the variables separately and summing the variance accounted for by each item then it accounted for 15.5% of the variance of learner achievement.

Discussion

These findings seem to indicate that student teachers do have an impact on the learners. Although accounting for 6% of the variance of learner achievement appears to be rather modest, it is in the high range when compared to other studies that have employed the same statistical technique in trying to explain the sources of variance in learner achievement. The impact of student teachers on learners ought to be an item of serious concern for all of those involved in teacher education. Perhaps institutions of higher education need to develop ways of minimizing this impact. This might be done with more intensive supervision

or a more gradual assumption of classroom responsibilities.

A second area of interest are the ratings of cooperating teachers and supervisors. It appears from this study that the relationship between the ratings and learner achievement increases with experience. By the end of the second term it appeared that the cooperating teacher and the college supervisor were doing a much better job of discriminating between those student teachers who were getting higher levels of student achievement and those who were not. This would seem to indicate the value of having the same cooperating teacher and supervisor work together over several semesters.

A third tentative conclusion could be that an evaluation of student teachers that includes numerous ratings on specific dimensions of teaching is of more value in reporting the impact of the student teacher on learners than a generalized overall rating. This finding could be of assistance to individuals charged with developing student teaching evaluation forms.

Finally, it should be kept in mind that one of the primary purposes of this study was to test the feasibility of the research model. Therefore, all conclusions should be taken with caution. It does appear that this type of a research model does have promise and can provide some useful data to teacher educators.

One potential limitation is the use of student teacher developed criterion-referenced tests. This concern relates to the lack of information on the reliability and validity of the instruments developed. Conventional reliability procedures appropriate for norm-referenced tests do not fit the requirements of this situation. Validity of the instruments was determined by the logical relationship of the performance objectives and the individual test items.

There are measurement concerns regarding the equivalence of the criterion referenced tests developed by the student teachers. No claim can be made that all the instruments were designed to measure identical content. However, it is possible to determine whether or not the levels of cognitive functioning

addressed in the test were nearly uniform. Table 2 presents a summary of characteristics of unit two tests developed by a sample of 21 student teachers. It is noted that the preponderance of items were designed to measure the knowledge level.

An on-going investigation is addressing these, and other, research concerns. It is hoped that additional refinements will stimulate additional research in teacher education and provide data that will be useful to decision makers.

Table 2

Summary of Characteristics of Unit Two Tests
Developed and Implemented by Student Teachers

Student Teacher	Number of obj addressed on test	Number of test items	Cognitive level addressed by test items
1	11	25	knowledge
2	7	50	knowledge
3	5	100	knowledge
4	2	25	(1)knowledge/ (1) application*
5	4	44	knowledge
6	2	26	knowledge
7	3	40	knowledge
8	15	31	knowledge
9	5	29	knowledge
10	7	67	knowledge
11	5	33	knowledge
12	6	28	(5)knowledge/ (1) application*
13	7	52	knowledge
14	5	40	knowledge
15	8	27	knowledge
16	5	28	(3)knowledge/ (2) application*
17	3	23	knowledge
18	8	73	knowledge
19	5	24	(2)knowledge/ (3) application*
20	1	11	knowledge
21	2	21	(1)knowledge/ (1) application*

* Number in parentheses represents the number of objectives of each type represented on the test.

References

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